

5087.

**PROJECT SPECIFIC PLAN FOR EXCAVATION CONTROL
OF AREA 9, PHASE III
(SUPPLEMENT TO 20300-PSP-0011)**

DEMOLITION, SOIL AND DISPOSAL PROJECT

**FERNALD CLOSURE PROJECT
FERNALD, OHIO**



AUGUST 2004

U.S. DEPARTMENT OF ENERGY

**21140-PSP-0004
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TABLE OF CONTENTS

	<u>Page</u>
1.0 Introduction	1-1
1.1 Purpose	1-1
1.2 Scope	1-1
1.3 Variance/Field Change Notice (V/FCN) Documentation	1-1
1.4 Key Personnel	1-2
2.0 Area-Specific Work Remaining Status.....	2-1
2.1 Area 9, Phase III.....	2-1
2.1.1 History	2-1
2.1.2 Predesign	2-1
2.1.3 Excavation Control.....	2-2
2.1.3.1 ASCOCs.....	2-2
2.1.3.2 Excavation Types.....	2-2
2.1.3.3 Locations.....	2-2
2.1.4 Precertification	2-3
3.0 Instrumentation and Techniques.....	Sec. 3 & 4
3.1 Measurement Instrumentation and Techniques.....	Sec. 3 & 4
3.1.1 Real-Time.....	Sec. 3 & 4
3.1.1.1 Sodium Iodide Data Acquisition (RTRAK, RSS, GATOR, EMS)....	Sec. 3 & 4
3.1.1.2 HPGe Data Acquisition.....	Sec. 3 & 4
3.1.1.3 Excavation Monitoring System	Sec. 3 & 4
3.1.1.4 Radon Monitor	Sec. 3 & 4
3.1.2 Surface Moisture Measurements	Sec. 3 & 4
3.2 Real-Time Measurement Identification.....	Sec. 3 & 4
3.3 Real-Time Data Mapping.....	Sec. 3 & 4
3.4 Real-Time Surveying	Sec. 3 & 4
4.0 Predesign	Sec. 3 & 4
5.0 Excavation Control Measures.....	Sec. 5 & 6
5.1 Excavation Design Control Requirements	Sec. 5 & 6
5.1.1 Contamination Zone	Sec. 5 & 6
5.1.2 Floors, Roads and Foundations	Sec. 5 & 6
5.1.3 Real-Time Lift Scans.....	Sec. 5 & 6
5.1.4 AWAC Lift Scans	Sec. 5 & 6
5.2 Organic Screening and Physical Sampling Requirements	Sec. 5 & 6
5.2.1 Above-WAC Photoionization Detector (PID)/Gas Chromatograph (GC) Screening	Sec. 5 & 6
5.2.2 All Other Physical Sample Requirements	Sec. 5 & 6
5.2.3 PID Screening and Physical Sampling Procedures	Sec. 5 & 6
5.2.4 Physical Sample Identification.....	Sec. 5 & 6

TABLE OF CONTENTS (Continued)

	<u>Page</u>
6.0 Precertification	Sec. 5 & 6
6.1 Initial Precertification NaI Scan at Base of Design Grade	Sec. 5 & 6
6.2 Precertification HPGe Measurements in 20 ppm FRL (Uranium) Areas.....	Sec. 5 & 6
6.3 Precertification HPGe Measurements in 82 ppm FRL (Uranium) Areas.....	Sec. 5 & 6
6.4 Delineating Hot Spots Following Precertification HPGe Measurements.....	Sec. 5 & 6
7.0 Quality Assurance/Quality Control Requirements	Sec. 7, 8, 9, 10 & 11
7.1 Quality Control Samples – Real-Time Measurements and Physical Samples	Sec. 7, 8, 9, 10 & 11
7.2 Data Validation	Sec. 7, 8, 9, 10 & 11
7.2.1 Physical Sample Data Validation.....	Sec. 7, 8, 9, 10 & 11
7.2.2 Real-Time Data Verification/Validation	Sec. 7, 8, 9, 10 & 11
7.3 Applicable Documents, Methods and Standards.....	Sec. 7, 8, 9, 10 & 11
7.4 Surveillances	Sec. 7, 8, 9, 10 & 11
7.5 Implementation and Documentation of Variance/Field Change Notices (V/FCN)	Sec. 7, 8, 9, 10 & 11
8.0 Safety and Health	Sec. 7, 8, 9, 10 & 11
9.0 Equipment Decontamination	Sec. 7, 8, 9, 10 & 11
10.0 Disposition of Wastes.....	Sec. 7, 8, 9, 10 & 11
11.0 Data and Records Management.....	Sec. 7, 8, 9, 10 & 11
11.1 Real-Time	Sec. 7, 8, 9, 10 & 11
11.2 Physical Samples	Sec. 7, 8, 9, 10 & 11

LIST OF TABLES

Table 1-1 Key Personnel

LIST OF ACRONYMS AND ABBREVIATIONS

ASCOC	area-specific constituent of concern
ASL	analytical support level
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COC	constituent of concern
DOE	U.S. Department of Energy
DQO	Data Quality Objective
DSDP	Demolition, Soil and Disposal Project
EMS	Excavation Monitoring System
FACTS	Fernald Analytical Computerized Tracking System
FCP	Fernald Closure Project
FRL	final remediation level
GC	gas chromatograph
HPGe	high-purity germanium (detector)
NaI	sodium iodide
OSDF	On-Site Disposal Facility
PID	photoionization detector
PPE	personal protective equipment
ppm	parts per million
PSP	Project Specific Plan
PWID	Project Waste Identification and Disposition Report
QA/QC	Quality Assurance/Quality Control
RSS	Radiation Scanning System
RTIMP	Real-Time Instrumentation Measurement Program
RTRAK	Real-Time Radiation Tracking System
RWP	Radiological Work Permit
SCQ	Sitewide CERCLA Quality Assurance Project Plan
SED	Sitewide Environmental Database
SEP	Sitewide Excavation Plan
TAL	Target Analyte List
V/FCN	Variance/Field Change Notice
VOC	volatile organic compound
WAC	Waste Acceptance Criteria
WAO	Waste Acceptance Organization

1.0 INTRODUCTION

This project specific plan (PSP) describes the data collection activities necessary to support excavation control of Area 9, Phase III. The general information that is routinely addressed in a PSP, can be found in 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation*. While this PSP (20300-PSP-0014) has section headings similar to a full-length PSP, where the information in the section is identical to the information in the general PSP, 20300-PSP-0011, a reference to this general PSP is made, and the information is not repeated.

1.1 PURPOSE

The purpose of this PSP is to provide specific direction regarding the excavation of Area 9, Phase III. This detailed information includes reason to sample, sample locations, number of borings, depth intervals, and constituents of concern.

1.2 SCOPE

The area included within the scope of this PSP is Area 9, Phase III. The schedule for implementation of this PSP is expected to begin in July 2004. This PSP is not considered a work authorization document (for implementation of fieldwork) per SH-0021, Work Permits. Work authorization documents directing the implementation of fieldwork, per SH-0021, may include applicable Environmental Services procedures, Fluor Fernald work permits, Radiological Work Permit (RWP), penetration permits, and other applicable permits.

1.3 VARIANCE/FIELD CHANGE NOTICE (V/FCN) DOCUMENTATION

The Variance/Field Change Notice (V/FCN) process is utilized to document the occurrence of two situations. The first is to document a change in protocol occurring when a modification in the characterization approach is required (e.g., a different decision process for defining the extent of contamination or for verifying that soil is below-WAC or below-FRL concentrations). Factors that will be considered under special circumstances include safety of the workers, cost effectiveness, the need for a timely response, and impending weather conditions. This type of V/FCN requires agency approval prior to implementation.

The second situation requiring a V/FCN is to provide documentation of sampling and analytical activities and to provide variable information that is dependent upon field conditions and cannot be specified initially in this PSP. As part of the excavation control process, the collection of physical samples will be documented in applicable field logs and with V/FCNs. Additionally, the Data Group Form, FS-F-5157 will be generated per Procedure EW-1021, Preparation of the Project Waste Identification and Disposition (PWID) Report, following the generation of data from the analysis of physical samples. In

this situation the use of this V/FCN form is not used to document a change in the protocol of this PSP, but is used to document sampling and analytical activities in order to demonstrate that these activities are compliant with the protocols of this PSP.

If a V/FCN is required, the Characterization Manager will document the change and requirements through the V/FCN process in accordance with Section 7.5 of the Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation, 20300-PSP-0011.

1.4 KEY PERSONNEL

The team members responsible for coordination of work in accordance with this PSP are listed in Table 1-1.

**TABLE 1-1
KEY PERSONNEL**

Title	Primary	Alternate
Department of Energy (DOE) Contact	Nina Akgunduz	Johnny Reising
DSDP Project Manager	Jyh-Dong Chiou	Rich Abitz
Characterization Manager	Frank Miller	Rich Abitz
Area 9, Phase III	Greg Lupton	Denise Arico
RTIMP Manager	Brian McDaniel	Dale Seiller
Soil Sampling Manager	Tom Buhrlage	Jim Hey
Surveying Manager	Jim Schwing	Andy Clinton
WAO Contact	Linda Barlow	TBD
Construction Manager	Warren Hooper	Charles Carney
Engineering Lead	Tony Snider	Dave Russell
Laboratory Contact	Heather Medley	Kathy Leslie
Data Validation Contact	Jim Chambers	Andy Sandfoss
Field Data Validation Contact	Dee Dee Edwards	Andy Sandfoss
Data Management Lead	Greg Lupton	Denise Arico
Radiological Control Contact	Corey Fabricante	Mike Schneider
FACTS/SED Database Contact	Kym Lockard	Susan Marsh
Quality Assurance Contact	Reinhard Friske	Darren Wessel
Safety and Health Contact	Gregg Johnson	Jeff Middaugh

2.0 AREA-SPECIFIC WORK REMAINING STATUS

2.1 AREA 9, PHASE III

2.1.1 History

Area 9, Phase III is located offsite, stretching east from the eastern boundary of the Fernald Closure Project (FCP) to the Great Miami River. The area has been established to encompass the land that the old outfall line passes through. The old outfall line was designed and built in 1951. In 1965, the outfall line was damaged by severe flooding and reconstructed between 1965 and 1966. In April 1989, an overflow of the old outfall line occurred at manhole 180. The old outfall line was replaced with a new higher capacity outfall line in 1992.

After the overflow of the old outfall line at manhole 180, soil and water samples were collected. Results of these samples were reported to the Department of Energy (DOE) and the property owner. In May 1989, characterization soil samples were taken. The results of the characterization sampling revealed that the soil immediately to the east of manhole 180 exceeded the adopted criteria for soil removal for the site area at that time. The criteria identified for this removal action was 52 parts per million (ppm) total uranium and/or 46 ppm total thorium. These action levels were established and used prior to the development of the current Final Remediation Levels (FRL). The affected area was eight feet by eight feet by two feet deep and was excavated in June 1989. Following excavation, samples were collected and analyzed with results demonstrating that the soil concentration criteria were achieved, and the excavated area was backfilled.

In 1993, still prior to the establishment of FRLs, additional samples were collected along the Great Miami River bank near the point of the outfall line discharge. The samples were split between an off-site commercial laboratory and the on-site laboratory. The on-site sample results, which were above the FRL in four borings, appear to be questionably high in comparison to the off-site laboratory's analytical results. All of the results from the off-site laboratory were below FRL. Therefore, confirmatory samples will be collected from the borings whose results were above FRL.

2.1.2 Predesign

The predesign investigation of Area 9, Phase III is in progress per *Project Specific Plan For Area 9, Phase III Outfall Ditch Predesign Investigation*, 20300-PSP-0014. Therefore, the required subsections for this section per 20300-PSP-0011 are not applicable and are not listed.

Historical data are presented in Appendix B, Table B-1 and all available predesign data are presented in Appendix B, Table B-2 of the Area 9, Phase III Abandoned Outfall Line Excavation Plan Part One, Revision B (DOE 2004).

2.1.3 Excavation Control

2.1.3.1 ASCOCs

It is known that technetium-99 is present in the sediment of the manholes and is likely to be in any hold-up material within the pipe. It is also highly likely that uranium is present in any hold-up material within the pipe. Therefore, U and Tc99 are considered to be the only WAC COCs for this excavation. The certification ASCOCs including the OU5 ASCOCs are listed in Table 3-1 of Certification Design Letter for Area 9, Phase III Abandoned Outfall Line – Part One.

2.1.3.2 Excavation Types

As discussed in the excavation plan, the manholes, pipe, bedding, and 6" of soil beneath the bedding material will be committed as AWAC material. Bedding material will include all soil that encompasses the process pipe and extends from the top of the piping to the bottom of the original pipe trench. Once all this material has been excavated, the certification sampling will commence. Therefore, no soil sampling is planned to occur under this PSP.

However, this plan will be used to direct the demarcation of biased sampling during the certification process. To accomplish this, during excavation of the pipe and bedding material, a flag will be posted at the northern fence line at the same easting where stained soil, and/or broken, cracked, or disjointed piping are observed as indications of pipe leakage. As discussed in the Certification Design Letter for Area 9 Phase III – Part One, biased samples will be collected at each of these flagged locations from the floor, and both the north and south sidewall approximately one foot from the floor of the excavation.

Excavation water will be sampled and analyzed for both uranium and total suspended solids (TSS) to determine the appropriate disposition of the water. This water sample will be analyzed at the onsite laboratory for uranium by the kinetic phosphorescence analyzer (KPA) and for TSS by the approved method.

2.1.3.3 Locations

As stated above, no soil samples are expected to be taken under this PSP. Water samples will be field located at the source of ponding water.

2.1.4 Precertification

Precertification will be performed per 20300-PSP-0011, Section 3.0 and Section 6.0. The excavator will excavate a bucket-load of soil from the bottom of the trench every 25 feet. Each bucket-load of material will be placed next to the trench to form a circular pad no less than 6 feet in diameter and 6 inches or less in thickness for HPGe measurements at a 15-cm detector height. The HPGe tripod measurement over the formed circular pad will determine if this soil meets the radiological FRLs. The trench will be backfilled with the material from the circular soil pad pending the results of the HPGe measurement. Additionally, per Section 3.3.10 of 21120-PL-0002 Area 9, Phase III Abandoned Outfall Line Excavation Plan Part One, real-time monitoring of the pads that represent the bottom of the trench has confirmed the absence of contaminated soil in an excavated section of trench, that section of trench will be backfilled using the stockpiled overburden soil. At the end of each day, precertification scans will be performed on the areas where impacted material load-out occurred.

3.0 INSTRUMENTATION AND TECHNIQUES

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for each of the following sections:

3.1 MEASUREMENT INSTRUMENTATION AND TECHNIQUES

3.1.1 Real-time

3.1.1.1 Sodium Iodide Data Acquisition (RTRAK, RSS, GATOR, EMS)

3.1.1.2 HPGe Data Acquisition

3.1.1.3 Excavation Monitoring System

3.1.1.4 Radon Monitor

3.1.2 Surface Moisture Measurements

3.2 REAL-TIME MEASUREMENT IDENTIFICATION

3.3 REAL-TIME DATA MAPPING

3.4 REAL-TIME SURVEYING

4.0 PREDESIGN

The predesign investigation of Area 9, Phase III is covered under Project Specific Plan For Area 9, Phase III Outfall Ditch Predesign Investigation, 20300-PSP-0014. Therefore, the required subsections for this section per 20300-PSP-0011 are not applicable and are not listed.

5.0 EXCAVATION CONTROL MEASURES

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for each of the following sections:

5.1 EXCAVATION DESIGN CONTROL REQUIREMENTS

5.1.1 Contamination Zone

5.1.2 Floors, Roads and Foundations

5.1.3 Real-time Lift Scans

5.1.4 AWAC Lift Scans

5.2 ORGANIC SCREENING AND PHYSICAL SAMPLING REQUIREMENTS

5.2.1 Above-WAC Photoionization Detector (PID)/Gas Chromatograph (GC) Screening

5.2.2 All Other Physical Sample Requirements

5.2.3 PID Screening and Physical Sampling Procedures

5.2.4 Physical Sample Identification

6.0 PRECERTIFICATION

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for each of the following sections:

6.1 INITIAL PRECERTIFICATION NaI SCAN AT BASE OF DESIGN GRADE

6.2 PRECERTIFICATION HPGE MEASUREMENTS IN 20 PPM FRL (URANIUM) AREAS

6.3 PRECERTIFICATION HPGE MEASUREMENTS IN 82 PPM FRL (URANIUM) AREAS

6.4 DELINEATING HOT SPOTS FOLLOWING PRECERTIFICATION HPGE MEASUREMENTS

7.0 QUALITY ASSURANCE/QUALITY CONTROL REQUIREMENTS

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for each of the following sections:

7.1 QUALITY CONTROL SAMPLES - REAL-TIME MEASUREMENTS AND PHYSICAL SAMPLES

7.2 DATA VALIDATION

7.2.1 Physical Sample Data Validation

7.2.2 Real-Time Data Verification/Validation

7.3 APPLICABLE DOCUMENTS, METHODS AND STANDARDS

7.4 SURVEILLANCES

7.5 IMPLEMENTATION AND DOCUMENTATION OF VARIANCE/ FIELD CHANGE NOTICES (V/FCN)

8.0 SAFETY AND HEALTH

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for this section.

9.0 EQUIPMENT DECONTAMINATION

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for this section.

10.0 DISPOSITION OF WASTES

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for this section.

11.0 DATA AND RECORDS MANAGEMENT

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for each of the following sections:

11.1 REAL-TIME

11.2 PHYSICAL SAMPLES